

10 20 30 40 50

MP 52 CSRKALEVNF KDMGWDDWII APLEYEAFBC EGLCEFFLRS HLEPTNEAVI

BMP 2 CKREPLYVDF SDVGWNDWIV APPGYEAFYC BGECFFPLAD HLNSTNEAIV

BMP 4 CRRESLYVDF SDVGWNDWIV APPGYDAFYC BGECFFPLAD HLNSTNEAIV

BMP 5 CKKHELYVSF RDLGWQDWII APEGYAIFYC DGECSFFPLA HMNATNEAIV

BMP 6 CKKHELYVSF QDLGWQDWII APKGYAANYC DGECSFFPLA HMNATNEAIV

BMP 7 CKKHELYVSF RDLGWQDWII APEGYAIFYC DGECSFFPLA HMNATNEAIV

* + *

60 70 80 90 100

MP 52 QILMNSMDFE STPTCCVPT RLSPIILFT DSANVVYKQ YEDMVVESOG CR

BMP 2 QILVNSVNS- KIPKACCPT ELSAISMLYL DENKVVILN YQDMVVEGOG CR

BMP 4 QILVNSVNS- SIPKACCPT ELSAISMLYL DEYDKVVILN YQDMVVEGOG CR

BMP 5 QILVELMDFE TVPKCCAPT KLNALISVLYF DSSNVILK YRNMVVRAGG CH

BMP 6 QILVELMDFE TVPKCCAPT KLNALISVLYF DSSNVILK YRNMVVRAGG CH

BMP 7 QILVHDFE TVPKCCAPT QLNALISVLYF DSSNVILK YRNMVVRAGG CH

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Figure 2a

Eco RI Nco I

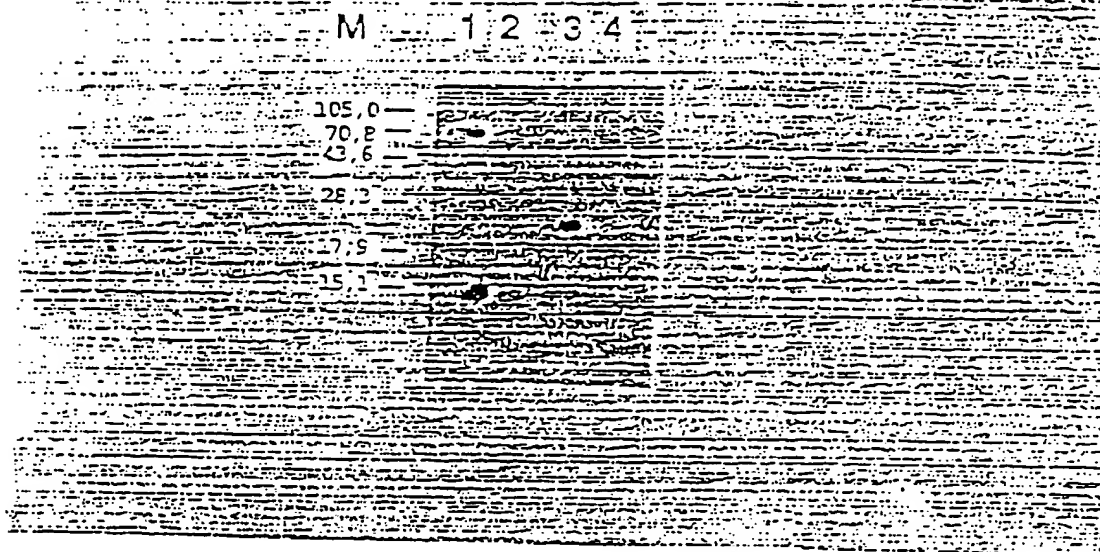
OD	ATGAATTCCCATGGACCTGGGCTGGTAKGAMTGGAT
BMP 2	ACGTGGGGTGGGATGACTGGAT
BMP 3	ATATTTGGCTGGAGTGAATGGAT
BMP 4	ATGTGGGCTGGGATGACTGGAT
BMP 7	ACGTGGGCTGGCAGGACTGGAT
TGF-β1	AGGAOCTGGGCTGGAGTGGAT
TGF-β2	GGGATCTAGGGTGGAAATGGAT
TGF-β3	AGGATCTGGGCTGGGAGTGGGT
Inhibin α	AGCTGGGCTGGGAACGGTGGAT
Inhibin β _A	ACATGGGCTGGGATGACTGGAT
Inhibin β _B	TCATGGGCTGGGAACGACTGGAT

Figure 2b

Eco RI

OID	ATGAATTGGAGCTGGGTSGGSRACACAGCA
BMP 2	GAGTTCTGTGGGGACACAGCA
BMP 3	CATCTTTTCTGGTACACAGCA
BMP 4	CAGTTCASTGGGACACACACA
BMP 7	GAGCTGGGTGGGGGACACAGCA
TGF-β1	CAGGGGCTGGGGACGGCAGCA
TGF-β2	TAAATCTTTGGGACAGGGCAGCA
TGF-β3	CAGGTCTCTGGGGACGGCAGCA
Inhibin α	CCCTGGGAGAGCAGCAGCA
Inhibin β _A	CAGCTTGGTGGGGACACAGCA
Inhibin β _B	CAGCTTGGTGGGAATGCAGCA

Figure 3



M: prestained protein molecular weight marker with the stated apparent molecular weights listed (Gibco BRL #26041-020)

- 1: Cell culture supernatant (100 μ l) after infection with recombinant viruses (with inserted MP52 cDNA) under reducing (1 % β -mercaptoethanol) conditions
- 2: Cell culture supernatant (100 μ l) after infection with wild-type viruses (without inserted foreign DNA) under reducing (1 % β -mercaptoethanol) conditions
- 3: Cell culture supernatant (500 μ l) after infection with recombinant viruses (with inserted MP52 cDNA) under non-reducing conditions
- 4: Cell culture supernatant (500 μ l) after infection with wild-type viruses (without inserted foreign DNA) under non-reducing conditions

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Figure 4

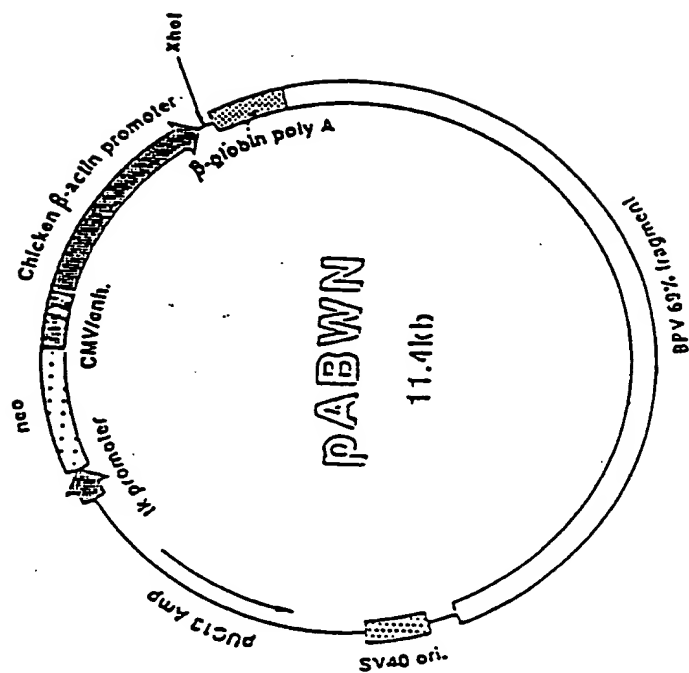




Figure 6

Cross-section of the implant (26 days after implantation) stained according to Masson-Goldner.

- 1: border consisting of osteoblasts (pink in the original)
- 2: osteoid (red in the original)
- 3: mineralized bone tissue (green in the original) with osteocytes (pink in the original)
- 4: bone marrow (slight pink to orange in the original)

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Fig.1

Fig.1a
Fig.1b

Fig.1a

	10	20	30	40	50
SEQ ID NO 13 MP 52	CSRKALHVN	KDMGWDDWII	APLEYEAFHC	EGLCEFPPLRS	HLEPTNHAIV
SEQ ID NO 14 BMP 2	CKRHPLYVDF	SDVGWNDWIV	APPGYHAFYC	HGECPPFLAD	HLNSTNHAIV
SEQ ID NO 15 BMP 4	CKRHSLYVDF	SDVGWNDWIV	APPGYQAFYC	HGDCPPFLAD	HLNSTNHAIV
SEQ ID NO 16 BMP 5	CKKHELYVSF	RDLGWQDWII	APEGYAAFYC	DGECSPFLNA	HMNATNHAIV
SEQ ID NO 17 BMP 6	CRKHELYVSF	QDLGWQDWII	APKGYAANYC	DGECSPFLNA	HMNATNHAIV
SEQ ID NO 18 BMP 7	CKKHELYVSF	RDLGWQDWII	APEGYAAAYC	EGECAPFLNS	YMNATNHAIV
	* + * * *	* * * * *	* * * * *	* * * * *	* * * * *

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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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Fig.1b

	60	70	80	90	100
SEQ ID NO 13 MP 52	QTLNMSMDPE	STPPTCCVPT	RLSPIILFI	DSANNVVKQ	YEDMVVESCQ CR
SEQ ID NO 14 BMP 2	QTLVNSVNS-	KIPKACCVPT	ELSAISMLYL	DENEKVVLKN	YQDMVVEGCG CR
SEQ ID NO 15 BMP 4	QTLVNSVNS-	SIPKACCVPT	ELSAISMLYL	DEYDKVVLKN	YQEMVVEGCG CR
SEQ ID NO 16 BMP 5	QTLVHLMFPD	HVPKPCCAPT	KLNAISVLYF	DDSSNVI LKK	YRNMVVRSCG CH
SEQ ID NO 17 BMP 6	QTLVHLMNPE	YVPKPCCAPT	KLNAISVLYF	DDNSNVI LKK	YRNMVVRACG CH
SEQ ID NO 18 BMP 7	QTLVHFINPE	TVPKPCCAPT	QLNAISVLYF	DDSSNVI LKK	YRNMVVRACG CH
	*** +++ ++	++ + + + + + +	++ ** *	* + + + *	* + + + + + + + + *

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Fig.2a

Eco RI Nco I

SEQ ID NO	OD	ATGAATTCCCATGGACCTGGGCTGGMAKGAMTGGAT
SEQ ID NO 20	BMP 2	ACGTGGGGTGGGAATGACTGGAT
SEQ ID NO 21	BMP 3	ATATTGGCTGGAGTGAATGGAT
SEQ ID NO 22	BMP 4	ATGTGGGCTGGAATGACTGGAT
SEQ ID NO 23	BMP 7	ACCTGGGCTGGCAGGACTGGAT
SEQ ID NO 24	TGF- β 1	AGGACCTCGGCTGGAAGTGGAT
SEQ ID NO 25	TGF- β 2	GGGATCTAGGGTGGAAATGGAT
SEQ ID NO 26	TGF- β 3	AGGATCTGGGCTGGAAGTGGGT
SEQ ID NO 27	INHIBIN α	AGCTGGGCTGGGAACGGTGGAT
SEQ ID NO 28	INHIBIN β A	ACATCGGCTGGAATGACTGGAT
SEQ ID NO 29	INHIBIN β B	TCATCGGCTGGAACGACTGGAT

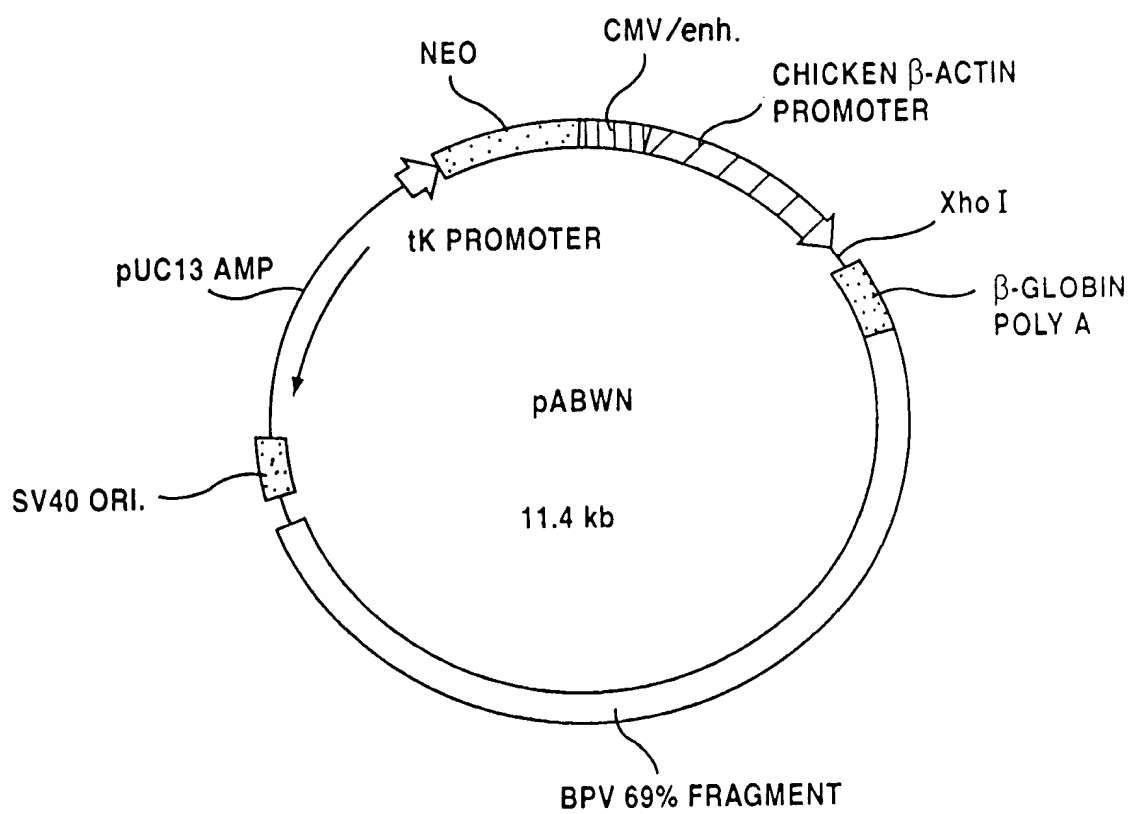
Fig.2b

Eco RI

SEQ ID NO	Gene	Sequence
30	OID	ATGAATTCTGAGCTGCGTSGGSRCACAGCA
31	BMP 2	GAGTTCTGTGCGGGACACAGCA
32	BMP 3	CATCTTTTCTGGTACACAGCA
33	BMP 4	CAGTTCAGTGGGCACACAACA
34	BMP 7	GAGCTGCGTGGGCGCACAGCA
35	TGF- β 1	CAGCGCCTGCGGCACGCAGCA
36	TGF- β 2	TAAATCTTGGGACACGCAGCA
37	TGF- β 3	CAGGTCCTGGGGCACGCAGCA
38	INHIBIN α	CCCTGGGAGAGCAGCACAGCA
39	INHIBIN β A	CAGCTTGGTGGGCACACAGCA
40	INHIBIN β B	CAGCTTGGTGGGAATGCAGCA

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Fig.4



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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Fig.5



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APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Fig.6



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